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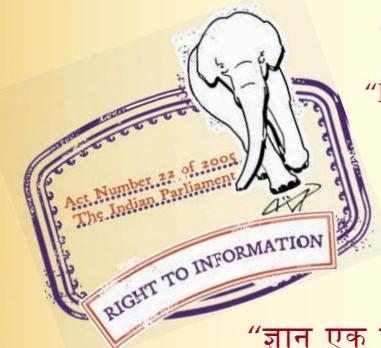
“Step Out From the Old to the New”

IS 8271-5-1 (1986): Quartz Crystal Units Used for Frequency Control and Selection, Part 5: Series CX for Oscillators, Section 1: Quartz Crystal Unit Type CX-01 [LITD 5: Semiconductor and Other Electronic Components and Devices]

“ज्ञान से एक नये भारत का निर्माण”

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“Knowledge is such a treasure which cannot be stolen”



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Indian Standard

**SPECIFICATION FOR
QUARTZ CRYSTAL UNITS USED FOR
FREQUENCY CONTROL AND SELECTION**

PART 5 SERIES CX FOR OSCILLATORS

Section 1 Quartz Crystal Unit Type CX-01

0. General — This standard shall be read in conjunction with IS : 8271 (Part 1)-1981 'Specification for quartz crystal units used for frequency control and selection: Part 1 General requirements and tests (first revision).

1. Outline and Dimensions — Holder outline shall conform to type CX [see IS : 4570 (Part 6)-1984 Specification for crystal unit holders: Part 6 Metal, solder seal, two pin crystal unit holder type CX].

2. Marking — See 8 of IS : 8271 (Part 1)-1981.

3. Construction and Workmanship — See 7 of IS : 8271 (Part 1)-1981.

4. Test Schedule and Detail Requirements

4.1 General Conditions for Test — See 9.2 of IS : 8271 (Part 1)-1981.

4.2 Test Schedule — The sequence and grouping of type, routine and acceptance tests shall be as per 9.1 of IS : 8271 (Part 1)-1981.

4.3 Detail Requirements — The detail requirements applicable to this particular type of crystal unit shall be as specified in Table 1.

TABLE 1 DETAIL OF QUARTZ CRYSTAL UNIT TYPE CX-01

SI No.	Characteristics	Requirements
(1)	(2)	(3)
i)	Type of holder	CX (see 1)
ii)	Frequency range	2.9 to 25 MHz
iii)	Frequency tolerance:	
a)	Primary operating temperature range	± 20 ppm
b)	Secondary operating temperature range	± 30 ppm
iv)	Load capacitance	30 ± 0.5 pF
v)	Mode of oscillation	Fundamental
vi)	Temperature range:	
a)	Primary	- 40°C to + 90°C
b)	Secondary	- 55°C to - 40°C and + 90°C to + 105°C
vii)	Test set calibration values, and rated drive level	See Table 2
viii)	Capacitance, shunt	7 pF maximum
ix)	Resonance resistance	See Table 3
x)	Shock [as per 9.15 (Severity A) of IS : 8271 (Part 1)-1981]	
a)	Frequency change permitted	± 5 ppm
b)	Resonance resistance change permitted	± 10 percent
xi)	Vibration [as per 9.16.1 (Severity A) of IS : 8271 (Part 1)-1981]	
a)	Frequency change permitted	± 5 ppm
b)	Resonance resistance change permitted	± 10 percent
xii)	Temperature cycling:	
a)	Frequency change permitted	± 5 ppm
b)	Resonance resistance change permitted	± 10 percent
xiii)	Ageing:	
a)	Frequency change permitted	5 ppm

Adopted 28 August 1986

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TABLE 2 TEST SET, CALIBRATION VALUES AND RATED DRIVE LEVEL

[Table 1, (vii)]

SI No.	Frequency Range	Calibration Values			Rated Drive Level	Test Set
		Resistance	Crystal Current	Resistor Vol- tage Drop		
(1)	(2) MHz	(3) ohms	(4) mA	(5) volts	(6) mW	(7)
i)	From 2·9 to 5·1	50	10	—	5·0 ± 1·0	TS-330/TSM
ii)	Over 5·1 to 7·5	22	15	—	5·0 ± 1·0	
iii)	Over 7·5 to 10	13	20	—	5·0 ± 1·0	
iv)	Over 10 to 25	10	—	0·22	5·0 ± 1·0	TS-683/TSM

TABLE 3 RESONANCE RESISTANCE

[Table 1, (ix)]

SI No.	Frequency Range	Maximum Resonance Resistance
(1)	(2) MHz	(3) ohms
i)	From 2·9 to 3·75	180
ii)	Over 3·75 to 4·75	120
iii)	Over 4·75 to 6	75
iv)	Over 6 to 7	50
v)	Over 7 to 10	30
vi)	Over 10 to 25	25

EXPLANATORY NOTE

This standard (Part 5/Sec 1) covers the requirements of crystal unit quartz style QC-20 of JSS 50906 (1971) 'Detail specification for crystal unit, quartz styles QC-20, QC-21, QC-22, QC-25 and QC-26, issued by the Directorate of Standardization, Ministry of Defence (India).

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